

X-15950.ST25.txt  
SEQUENCE LISTING

&lt;110&gt; Applied Molecular Evolution, Inc.

&lt;120&gt; Human IL-1 Beta Antagonists

&lt;130&gt; X-15950

&lt;150&gt; 60/442,798

&lt;151&gt; 2003-01-24

&lt;160&gt; 68

&lt;170&gt; PatentIn version 3.2

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X-15950.ST25.txt

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Lys Phe Ser Gln Asp Ile Asp Arg Phe Leu Thr  
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Val Gln Tyr Asp Glu Phe Pro Tyr Gly  
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 gtcactatca cttgcaaggc gagtcaggac attgataggt atttaagttg gttccagcag 180  
 aaaccaggga aatctcctaa gaccctgac tatcgtgtaa agagattggg agatgggggtc 240  
 ccatcaaggt tcagtggcag cgcattctgg caagattatt ctctcaccat cagcagcctg 300  
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asp Arg Tyr

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Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Asp Ile Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Met Tyr Tyr Asp Tyr Asp Gln Gly Phe Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val  
115 120 125

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala  
130 135 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser  
145 150 155 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val  
165 170 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro  
180 185 190

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys  
195 200 205

Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp  
210 215 220

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
225 230 235 240

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
245 250 255

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
260 265 270

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
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Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
 290 295 300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 305 310 315 320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
 325 330 335

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
 340 345 350

Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu  
 355 360 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
 370 375 380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
 385 390 395 400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
 405 410 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
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Leu Thr Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile  
 35 40 45

Tyr Arg Val Lys Arg Leu Val Asp Gly Val Pro Ser Arg Phe Ser Gly  
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Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Ile Gln Tyr Asp Glu Phe Pro Tyr  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala  
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
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Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asp Arg Tyr  
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Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Asp Ile Asn Tyr Asn Glu Lys Phe  
50 55 60

## X-15950.ST25.txt

Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Met Tyr Tyr Asp Tyr Asp Gln Gly Phe Asp Leu Trp Gly Gln  
 100 105 110  
 Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val  
 115 120 125  
 Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala  
 130 135 140  
 Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser  
 145 150 155 160  
 Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val  
 165 170 175  
 Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro  
 180 185 190  
 Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys  
 195 200 205  
 Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp  
 210 215 220  
 Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
 225 230 235 240  
 Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 245 250 255  
 Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 260 265 270  
 Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 275 280 285  
 Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
 290 295 300  
 Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 305 310 315 320  
 Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu

X-15950.ST25.txt  
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325

335

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
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Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu  
355 360 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
370 375 380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
385 390 395 400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
405 410 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
420 425 430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
435 440 445

Gly Lys  
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Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile  
35 40 45

Tyr Arg Val Lys Arg Leu Val Asp Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Val Gln Tyr Asp Glu Phe Pro Tyr  
85 90 95

X-15950.ST25.txt

Gly Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala  
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 Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
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 Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
       130                  135                  140  
 Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
   145                  150                  155                  160  
 Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
                   165                  170                  175  
 Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
                   180                  185                  190  
 Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
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 Phe Asn Arg Gly Glu Cys  
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           20                  25                  30  
 Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
       35                  40                  45  
 Gly Glu Ile Leu Pro Gly Ser Gly Thr Ile Asn Tyr Asn Glu Lys Phe  
       50                  55                  60  
 Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
       65                  70                  75                  80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
           85                  90                  95



## X-15950.ST25.txt

Ala Arg Met Tyr Tyr Asp Tyr Asp Gln Gly Phe Asp Asn Trp Gly Gln  
 100 105 110  
 Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val  
 115 120 125  
 Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala  
 130 135 140  
 Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser  
 145 150 155 160  
 Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val  
 165 170 175  
 Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro  
 180 185 190  
 Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys  
 195 200 205  
 Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp  
 210 215 220  
 Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
 225 230 235 240  
 Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 245 250 255  
 Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 260 265 270  
 Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 275 280 285  
 Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
 290 295 300  
 Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 305 310 315 320  
 Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
 325 330 335  
 Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
 340 345 350  
 Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu  
 355 360 365

## X-15950.ST25.txt

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
 370 375 380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
 385 390 395 400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
 405 410 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
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Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
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Gly Lys  
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<223> Synthetic Construct

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Phe Ser Gln Asp Ile Asp Arg Phe  
 20 25 30

Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile  
 35 40 45

Tyr Arg Val Lys Arg Leu Val Asp Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Val Gln Tyr Asp Glu Phe Pro Tyr  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala  
 100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
 115 120 125

## X-15950.ST25.txt

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
 130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
 145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
 165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
 180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
 195 200 205

Phe Asn Arg Gly Glu  
 210

<210> 51  
 <211> 450  
 <212> PRT  
 <213> ARTIFICIAL SEQUENCE

<220>  
 <223> Synthetic Construct

<400> 51

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asp Arg Tyr  
 20 25 30

Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Asp Ile Asn Tyr Asn Glu Lys Phe  
 50 55 60

Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Met Tyr Tyr Asp Tyr Asp Gln Gly Phe Asp Tyr Trp Gly Gln  
 100 105 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val  
 115 120 125

X-15950.ST25.txt

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala  
 130 135 140  
 Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser  
 145 150 155 160  
 Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val  
 165 170 175  
 Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro  
 180 185 190  
 Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys  
 195 200 205  
 Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp  
 210 215 220  
 Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
 225 230 235 240  
 Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 245 250 255  
 Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 260 265 270  
 Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 275 280 285  
 Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
 290 295 300  
 Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 305 310 315 320  
 Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
 325 330 335  
 Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
 340 345 350  
 Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu  
 355 360 365  
 Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
 370 375 380  
 Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
 385 390 395 400

X-15950.ST25.txt

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
 405 410 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
 420 425 430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
 435 440 445

Gly Lys  
 450

<210> 52  
 <211> 213  
 <212> PRT  
 <213> ARTIFICIAL SEQUENCE

<220>  
 <223> Synthetic Construct

<400> 52

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Phe Ser Gln Asp Ile Asp Arg Phe  
 20 25 30

Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile  
 35 40 45

Tyr Arg Val Lys Arg Leu Val Asp Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Val Gln Tyr Asp Glu Phe Pro Tyr  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala  
 100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
 115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
 130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
 145 150 155 160

X-15950.ST25.txt

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
 165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
 180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
 195 200 205

Phe Asn Arg Gly Glu  
 210

<210> 53  
 <211> 450  
 <212> PRT  
 <213> ARTIFICIAL SEQUENCE

<220>  
 <223> Synthetic Construct

<400> 53

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asp Arg Tyr  
 20 25 30

Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Asp Ile Asn Tyr Asn Glu Lys Phe  
 50 55 60

Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Met Tyr Tyr Asp Tyr Asp Gln Gly Phe Ser Leu Trp Gly Gln  
 100 105 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val  
 115 120 125

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala  
 130 135 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser  
 145 150 155 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val  
 Page 22

X-15950.ST25.txt  
170

165

175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro  
 180 185 190  
 Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys  
 195 200 205  
 Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp  
 210 215 220  
 Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
 225 230 235 240  
 Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 245 250 255  
 Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 260 265 270  
 Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 275 280 285  
 Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
 290 295 300  
 Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 305 310 315 320  
 Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
 325 330 335  
 Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
 340 345 350  
 Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu  
 355 360 365  
 Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
 370 375 380  
 Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
 385 390 395 400  
 Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
 405 410 415  
 Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
 420 425 430

X-15950.ST25.txt

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
 435 440 445

Gly Lys  
 450

<210> 54  
 <211> 213  
 <212> PRT  
 <213> ARTIFICIAL SEQUENCE

<220>  
 <223> Synthetic Construct

<400> 54

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asp Arg Phe  
 20 25 30

Leu Ser Trp Phe Gln Gln Lys Pro Lys Ala Pro Lys Ser Leu Ile Tyr  
 35 40 45

Arg Val Lys Arg Leu Val Asp Gly Val Pro Ser Arg Phe Ser Gly Ser  
 50 55 60

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu  
 65 70 75 80

Asp Phe Ala Thr Tyr Tyr Cys Val Gln Tyr Asp Glu Phe Pro Tyr Thr  
 85 90 95

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro  
 100 105 110

Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr  
 115 120 125

Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys  
 130 135 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu  
 145 150 155 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser  
 165 170 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala  
 180 185 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe



195

200

X-15950.ST25.txt  
205Asn Arg Gly Glu Cys  
210<210> 55  
<211> 407  
<212> DNA  
<213> HUMAN

<400> 55  
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 tccgtgaagg tctcctgcaa ggcttctggc tacacattcg accgctattg gatcgagtgg 120  
 gtgcgccagg cccctggcca aggcctggag tggatgggag agattctgcc tggcagcggc 180  
 gacattaact acaatgagaa gttcaagggc cgcgtcacga ttaccgcgga caaatccacg 240  
 agcacagcct acatggagct gagcagcctg cgctctgagg acacggccgt gtattactgt 300  
 gcgcgcatgt actatgatta cgaccagggc tttgactact ggggccaggg caccctggtc 360  
 accgtctcct ccgcctccac caagggccca tcggtcttcc cgctagc 407

<210> 56  
<211> 407  
<212> DNA  
<213> HUMAN

<400> 56  
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 tccgtgaagg tctcctgcaa ggcttctggc tacacattcg accgctattg gatcgagtgg 120  
 gtgcgccagg cccctggcca aggcctggag tggatgggag agattctgcc tggcagcggc 180  
 gacattaact acaatgagaa gttcaagggc cgcgtcacga ttaccgcgga caaatccacg 240  
 agcacagcct acatggagct gagcagcctg cgctctgagg acacggccgt gtattactgt 300  
 gcgcgcatgt actatgatta cgaccagggc tttgacctgt ggggccaggg caccctggtc 360  
 accgtctcct ccgcctccac caagggccca tcggtcttcc cgctagc 407

<210> 57  
<211> 407  
<212> DNA  
<213> HUMAN

<400> 57  
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 tccgtgaagg tctcctgcaa ggcttctggc tacacattcg accgctattg gatcgagtgg 120  
 gtgcgccagg cccctggcca aggcctggag tggatgggag agattctgcc tggcagcggc 180  
 accattaact acaatgagaa gttcaagggc cgcgtcacga ttaccgcgga caaatccacg 240  
 agcacagcct acatggagct gagcagcctg cgctctgagg acacggccgt gtattactgt 300  
 gcgcgcatgt actatgatta cgaccagggc tttgacaact ggggccaggg caccctggtc 360

X-15950.ST25.txt

accgtctcct ccgcctccac caagggccca tcggtcttcc cgctagc 407

<210> 58  
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 <212> DNA  
 <213> HUMAN

<400> 58  
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 tccgtgaagg tctcctgcaa ggcttctggc tacacattcg accgctattg gatcgagtgg 120  
 gtgcgccagg cccctggcca aggcctggag tggatgggag agattctgcc tggcagcggc 180  
 gacattaact acaatgagaa gttcaagggc cgcgtcacga ttaccgcgga caaatccacg 240  
 agcacagcct acatggagct gagcagcctg cgctctgagg acacggccgt gtattactgt 300  
 gcgcgcatgt actatgatta cgaccagggc tttagcctgt ggggccaggg caccctgggtc 360  
 accgtctcct ccgcctccac caagggccca tcggtcttcc cgctagc 407

<210> 59  
 <211> 407  
 <212> DNA  
 <213> HUMAN

<400> 59  
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 tccgtgaagg tctcctgcaa ggcttctggc tacacattcg accgctattg gatcgagtgg 120  
 gtgcgccagg cccctggcca aggcctggag tggatgggag agattctgcc tggcagcggc 180  
 gacattaact acaatgagaa gttcaagggc cgcgtcacga ttaccgcgga caaatccacg 240  
 agcacagcct acatggagct gagcagcctg cgctctgagg acacggccgt gtattactgt 300  
 gcgcgcatgt actatgatta cgaccagggc tttgactact ggggccaggg caccctgggtc 360  
 accgtctcct ccgcctccac caagggccca tcggtcttcc cgctagc 407

<210> 60  
 <211> 321  
 <212> DNA  
 <213> HUMAN

<400> 60  
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 atcacttgta agttcagtca ggacattgat cgcttcctga cctggtttca gcagaaacca 120  
 ggcaaagccc ctaagtcctt gatctatcgc gtgaagcgcc tggatggatgg cgtcccatcc 180  
 cgcttcagcg gcagtggctc tggcacagat ttactctca ccatcagcag cctgcagcct 240  
 gaagattttg caacttatta ctgcatccag tatgatgagt ttccgtacac cttcggcggc 300  
 ggcaccaagg tggagatcaa a 321

<210> 61  
 <211> 321  
 <212> DNA

## X-15950.ST25.txt

&lt;213&gt; HUMAN

&lt;400&gt; 61

gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtgggcga ccgcgtcacc	60
atcacttgta agttcagtca ggacattgat cgcttcctga gctgggtttca gcagaaacca	120
ggcaaagccc ctaagtcctt gatctatcgc gtgaagcgcc tggatggatgg cgtcccatcc	180
cgcttcagcg gcagtggctc tggcacagat ttactctca ccatcagcag cctgcagcct	240
gaagattttg caacttatta ctgcgttcag tatgatgagt ttccgtacgg ttccggcggc	300
ggcaccaagg tggagatcaa a	321

&lt;210&gt; 62

&lt;211&gt; 321

&lt;212&gt; DNA

&lt;213&gt; HUMAN

&lt;400&gt; 62

gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtgggcga ccgcgtcacc	60
atcacttgta agttcagtca ggacattgat cgcttcctga gctgggtttca gcagaaacca	120
ggcaaagccc ctaagtcctt gatctatcgc gtgaagcgcc tggatggatgg cgtcccatcc	180
cgcttcagcg gcagtggctc tggcacagat ttactctca ccatcagcag cctgcagcct	240
gaagattttg caacttatta ctgcgttcag tatgatgagt ttccgtacac cttcggcggc	300
ggcaccaagg tggagatcaa a	321

&lt;210&gt; 63

&lt;211&gt; 321

&lt;212&gt; DNA

&lt;213&gt; HUMAN

&lt;400&gt; 63

gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtgggcga ccgcgtcacc	60
atcacttgta agttcagtca ggacattgat cgcttcctga gctgggtttca gcagaaacca	120
ggcaaagccc ctaagtcctt gatctatcgc gtgaagcgcc tggatggatgg cgtcccatcc	180
cgcttcagcg gcagtggctc tggcacagat ttactctca ccatcagcag cctgcagcct	240
gaagattttg caacttatta ctgcgttcag tatgatgagt ttccgtacac cttcggcggc	300
ggcaccaagg tggagatcaa a	321

&lt;210&gt; 64

&lt;211&gt; 321

&lt;212&gt; DNA

&lt;213&gt; HUMAN

&lt;400&gt; 64

gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtgggcga ccgcgtcacc	60
atcacttgta aggcgagtca ggacattgat cgcttcctga gctgggtttca gcagaaacca	120
ggcaaagccc ctaagtcctt gatctatcgc gtgaagcgcc tggatggatgg cgtcccatcc	180
cgcttcagcg gcagtggctc tggcacagat ttactctca ccatcagcag cctgcagcct	240

## X-15950.ST25.txt

gaagattttg caacttatta ctgctttcag tatgatgagt ttccgtacac cttcggcggc 300  
 ggcaccaagg tggagatcaa a 321

<210> 65  
 <211> 990  
 <212> DNA  
 <213> HUMAN

<400> 65  
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 acagcggccc tgggctgcct ggtcaaggac tacttccccg aaccggtgac ggtgtcgtgg 120  
 aactcaggcg ccctgaccag cggcgtgcac accttccccg ctgtcctaca gtcctcagga 180  
 ctctactccc tcagcagcgt ggtgaccgtg ccctccagca gcttgggcac ccagacctac 240  
 atctgcaacg tgaatcaca gccccagcaac accaagggtg acaagaaagt tgagcccaaa 300  
 tcttgtgaca aaactcacac atgcccaccg tgcccagcac ctgaactcct ggggggaccg 360  
 tcagtcttcc tcttcccccc aaaacccaag gacaccctca tgatctcccg gacccctgag 420  
 gtcacatgcg tgggtggtgga cgtgagccac gaagaccctg aggtcaagtt caactggtac 480  
 gtggacggcg tggaggtgca taatgccaag acaaagccgc gggaggagca gtacaacagc 540  
 acgtaccgtg tggtcagcgt cctcaccgtc ctgcaccagg actggctgaa tggcaaggag 600  
 tacaagtgca aggtctccaa caaagccctc ccagcccca tcgagaaaac catctccaaa 660  
 gccaaagggc agccccgaga accacaggtg tacaccctgc ccccatcccg ggacgagctg 720  
 accaagaacc aggtcagcct gacctgcctg gtcaaaggct tctatcccag cgacatcgcc 780  
 gtggagtggg agagcaatgg gcagccggag acaactaca agaccacgcc ccccggtgctg 840  
 gactccgacg gctccttctt cctctatagc aagctcaccg tggacaagag caggtggcag 900  
 caggggaacg tcttctcatg ctccgtgatg catgaggctc tgcacaacca ctacacgcag 960  
 aagagcctct ccctgtctcc gggtaaatga 990

<210> 66  
 <211> 952  
 <212> DNA  
 <213> HUMAN

<400> 66  
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 gactacttcc ccgaaccggt gacggtgtcg tggaaactcag gcgccctgac cagcggcgtg 120  
 cacaccttcc cggctgtcct acagtctca ggactctact ccctcagcag cgtggtgacc 180  
 gtgccctcca gcagcttggg cacgaagacc tacacctgca acgtagatca caagcccagc 240  
 aacaccaagg tggacaagag agttgagtcc aaatatggtc ccccatgccc accctgcccc 300  
 gcacctgagt tcctgggggg accatcagtc ttcctgttcc ccccaaaacc caaggacact 360  
 ctcatgatct cccggacccc tgaggtcacg tgcgtggtgg tggacgtgag ccaggaagac 420

X-15950.ST25.txt

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cccgaggtcc agttcaactg gtacgtggat ggcgtggagg tgcataatgc caagacaaag 480
ccgcgggagg agcagttcaa cagcacgtac cgtgtgggtca gcgtcctcac cgtcctgcac 540
caggactggc tgaacggcaa ggagtacaag tgcaagggtct ccaacaaagg cctcccgtcc 600
tccatcgaga aaaccatctc caaagccaaa gggcagcccc gagagccaca ggtgtacacc 660
ctgcccccat cccaggagga gatgaccaag aaccagggtca gcctgacctg cctgggtcaaa 720
ggcttctacc ccagcgacat cgccgtggag tgggagagca atgggcagcc ggagaacaac 780
tacaagacca cgctcccgt gctggactcc gacggctcct tcttcctcta cagcaggcta 840
accgtggaca agagcaggtg gcaggagggg aatgtcttct catgctccgt gatgcatgag 900
gctctgcaca accactacac acagaagagc ctctccctgt ctctgggtaa at 952

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<210> 67  
 <211> 324  
 <212> DNA  
 <213> HUMAN

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<400> 67
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ggaactgcct ctgttgtgtg cctgctgaat aacttctatc ccagagaggc caaagtacag 120
tggaaggtgg ataacgccct ccaatcgggt aactcccagg agagtgtcac agagcaggac 180
agcaaggaca gcacctacag cctcagcagc accctgacgc tgagcaaagc agactacgag 240
aaacacaaag tctacgcctg cgaagtcacc catcagggcc tgagctcgcc cgtcaciaaag 300
agcttcaaca ggggagagtg ctaa 324

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<210> 68  
 <211> 467  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Construct

<400> 68

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro  
 1 5 10 15

Gly Ser Thr Gly Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 20 25 30

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 35 40 45

Phe Asp Arg Tyr Trp Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly  
 50 55 60

Leu Glu Trp Met Gly Glu Ile Leu Pro Gly Ser Gly Asp Ile Asn Tyr  
 65 70 75 80

## X-15950.ST25.txt

Asn Glu Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr  
 85 90 95  
 Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 100 105 110  
 Val Tyr Tyr Cys Ala Arg Met Tyr Tyr Asp Tyr Asp Gln Gly Phe Asp  
 115 120 125  
 Leu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys  
 130 135 140  
 Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu  
 145 150 155 160  
 Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro  
 165 170 175  
 Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr  
 180 185 190  
 Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val  
 195 200 205  
 Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn  
 210 215 220  
 Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser  
 225 230 235 240  
 Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly  
 245 250 255  
 Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 260 265 270  
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln  
 275 280 285  
 Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 290 295 300  
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr  
 305 310 315 320  
 Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 325 330 335  
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile  
 340 345 350

## X-15950.ST25.txt

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
355 360 365

Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser  
370 375 380

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
385 390 395 400

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
405 410 415

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val  
420 425 430

Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met  
435 440 445

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
450 455 460

Leu Gly Lys  
465